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A DEFINITIVE CRITIQUE OF EXPERIENTIAL LEARNING THEORY

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THE DEFINITIVE CRITIQUE OF EXPERIENTIAL LEARNING THEORY

Phase One: Experiential Learning Qua Learning

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The research was begun in 1977 at the request of Dr. David Kolb, co-originator of Experiential Learning Theory (ELT), the Experiential Learning Cycle Model, its Learning Style Inventory, and adaptive competence instruments and measures. It was undertaken to substantiate the philosophical and epistemological underpinnings of the theory, i.e. to test for construct validity. The document was to have been published as part of a research project on Life Long Learning and Adult Development funded by the National Institute of Education, through the Department of Organizational Behavior. Weatherhead School of Management, Case Western Reserve University, Cleveland, Ohio. Although Kolb signed off on the research conclusions, the findings were not published. Neither was the theory amended to make it valid.

ABSTRACT

The paper is the first phase of a definitive critique of Experiential Learning Theory and its hypothesized construct validity. A thorough examination of the intellectual and scientific roots of Experiential Learning Theory, its assumptions, and foundational references were analyzed to address three substantive questions fundamental to the theory. What is learning? Are the Experiential Learning Model modes separate and distinct in their functions so as to necessitate a four-stage cycle for learning to take place? Is dialectic tension the mechanism that mediates the relationship between the modes and between the person and the environment? The first phase of the research addresses learning, and the definition derived by Experiential Learning Theory. It concludes that Experiential Learning Theory's definition of learning is a dramatic distortion of the very epistemological fundamentals it references. The author proposes a different definition more consistent with those fundamentals. Phases Two and Three of the critique address issues of internal consistency in the Experiential Learning Cycle, and the constructs applied to provide the model with mechanism. Phase Three of the critique concludes that the infrastructure of Experiential Learning Theory, its Model, and the Learning Style Inventory is faulty at the core, and recommends that the operational evolution of learning styles as a combination of contiguous modes of learning be re-evaluated.

PHASE ONE

The starting point for a definition of learning qua learning must confront the most basic philosophical controversies concerning how humans know:

EITHER

Consciousness, i.e., the common conditions through which all human faculties brought into operation, is a derivative of experience, i.e., sensations, impressions, and observations on these two,

OR

Experience, i.e., sensations, impressions, and observations on these two, is a derivative of consciousness, i.e., the common conditions through which all human faculties are brought into operation. Experience is defined as empirical cognition – the determination of objects and events in sensation by Means of perception, a faculty of reason.

Fleming, 1886:

The former proposition represents the starting point discerned by Hume, Locke, Berkeley, William James, and John Dewey. It is the empiricist stance. The latter proposition represents the starting point discerned by Socrates, Plato, Descartes, Kant, and Hegel. It is the idealist stance. With the former one knows through reasoning a posteriori – through experience. With the latter, one knows through reasoning both a posteriori and a priori – antecedent to experience.

There is a third stance. Aristotle contended that sensation was faculty, an innate capacity for sense perception. He differentiated those animals in whom sense impression comes to persist, and those in whom it does not. Humans are in the former category. Experience arises out of the capacity to retain sense impression. This capacity is separate from the faculty to reason itself. It is the capacity to retain images from sensory perception.

...animals in which it [the persistence of sense impressions] does come into being have perception and can continue to retain sense impression in the soul:

and when such persistence is frequently repeated a further distinction at once arises between those which out of the persistence of such sense impressions develop a power of systematizing them and those which do not. So out of sense perception comes to be what we call memory, and out of frequently repeated memories of the same thing develops experience; for a number of memories constitute a single experience...We conclude that these states of knowledge are neither innate in a determinate form, nor developed from other higher states of knowledge, but from sense perception....The soul is so constituted as to be capable of this process.

Aristotle, *Posterior Analytics*, Book II, 19.

For Aristotle, the faculty of sense perception generates the ability to develop experience. Hence it is a faculty of consciousness, to be sure. But a faculty which is specific to perception of sensation, and not reasoning.

Piaget, a foundational reference for Experiential Learning Theory, took much from Aristotle. Piaget contends that the source for sense perception is constructive activities of a structural nature. He describes these activities as *constructive structural and transformational activities, which are coordinated in action*. Piaget proposed that whatever is called consciousness, resides in the central coordination of activity which structures experience. The ultimate source of this central coordinated activity remains a mystery. But one which Piaget believes is discoverable. Piaget cogently explicates this issue in his discussion of mathematical epistemology.

But in what sense can we then speak of a pre-established harmony between deduction and experience to explain the accordance of mathematics with reality? Not in the empirical sense, since reason gives form to experience instead of being derived from it, and sometimes even does this in a surprising way by anticipating future experiences. But neither can we speak of it in the sense of the Kantian or even of the Hilbertian a priori, for at the beginning there is no framework common to experience and to reason containing in advance the forms developed by the latter and applied to the former. What we have given in advance is a common origin, from which proceed two constructions, at first independent, then parallel, but with the second in advance of the other. And this common origin is simply the coordination of the subject's actions. But as this general coordination of actions itself depends on the laws of neural coordinations, and the latter on the laws of organic coordination in general, as

the organisms originated (in a way still unknown to us) out of interaction with the physico-chemical environment, this common origin of reason and experience assumes from the start a fundamental interaction between the subject (organism) and the objects (environment). This is not then an a priori framework containing the whole development in advance but a common point of origin from which is built up an uninterrupted series of constructions, then stage-by-stage reconstructions of the structures already outlined in the preceding stages.

Beth and Piaget, 66:284

This scientific explanation postulates a chain of causality ending with a constructivistic transformational set of activities.

In conclusion, the operational constructivism suggested by genetic analysis is reduced neither to empiricism nor to apriorism, because we could not derive intelligence itself from objects (“...nisi ipse intellectus”) and because the subject does not possess frameworks which contain all reason in advance, but only a certain activity which allows him to construct operational structures. This construction is not arbitrary, for the individual subject is neither its origin nor does he seem to control it. The epistemic subject (as opposed to the psychological subject) is what all subjects have in common, since the general coordinations of actions involve a universal which is of biological organization itself. Contrary to physical or psychological empiricism, constructivism therefore implies an internal adjustment, objectively expressed by a progressive equilibrium of the structures of coordination, and subjectively by a system of norms and kinds of self-evidence which are progressively elaborated. And this biological origin of constructivism could not lead to a biological empiricism by analogy with physical or psychological empiricism, for the subject has no experience of this type and only knows the laws of the coordinations of his own actions through their results, that is, by constructing the latter, at first by a logical-mathematical experience which is very different from the experience of empiricism, then deductively.

Beth and Piaget, 66:285

Piaget’s constructivistic transformational proposition offers a third argument on the nature of consciousness and experience, idealism and empiricism. Grounded in Aristotelian fundamentals, it is mechanistic in nature. The emergence of new mental structures for organizing experience is accompanied by increasing ability to distinguish between appearance and reality, between how things look and how they really are. The emergence of mental structures occurs first on a concrete level and then on a symbolic

one. Mind does not copy reality, but organizes and transforms it by a process which Piaget openly admits resides in the unconscious. Learning is not so much the modification of behavior as a result of experience, but the modification of experience as a result of behavior. Action changes the nature of experience. The *totality* of knowing is the result of relations within the mind's transformational structures as it integrates experience and cognition, sensation and reason.

Kant claimed that there are three realities of nature or objects of mental activity, the natures of which Pure Reason cannot fathom – God, freedom, and immortality. Pure Reason's faculties are limited by these three not having any ground in experience or intuition. There is no way to actually know the constitutive natures of God, freedom, and immortality, as these originate beyond the reasoning powers of Pure Reason. (Kant, 1789/1934:28) Kant based his *Critique of Pure Reason* on these limitations. Piaget does not debate whether or not reason can fathom God, freedom and immortality. Their very existence as cognitions results from structuring activity. The limits of cognition are as expandable as the human's capacity to stretch and create new structures in cognition. Piaget contends that the activities of reflective abstraction are the keys to that kind of stretching.

The central issue in respect to Experiential Learning Theory and learning is the choice of domain assumptions. Experiential Learning Theory defines learning as an

...integrated process with (1) here and now experience followed by (2) collection of data and observations about that experience...which are then (3) analysed and the conclusions of this analysis are fed back to the actors in the experience for use in (4) modification of their behavior and choice of new experiences.

Kolb and Fry, 1975:33-34

On its surface, Kolb and Fry's definition of learning supports an empirical-pragmatist stance of knowing, where knowing is a function of sensory immersion, following by cognitive processes. Experiential Learning Theory contradicts its empiricist fundamentals by drawing parallels with Piaget's stages of cognitive development. Although Piaget bows to the significance of experience in the development of cognitive processes, he does not claim experience to be learning's root. The common origin or *root* of consciousness and experience are constructivistic centrally coordinated mental activities. Piaget's definition of learning is one of operationalized genetic epistemology – grounded in structural mechanisms, the origin of which Piaget does not ascribe. As such, Piaget allows for both experience and an ephemeral source of consciousness to initiate cognitive development.

The fundamental questions which the empirical-pragmatist stance cannot answer, but one which Piaget admits is discoverable is this: How is it that a bioelectrical impulse in the central nervous system becomes an idea? And is the *source* of the bioelectrical impulse experience, consciousness, genetics, or beyond human capacity to discern? To generate a consistent theory on learning, one must take a clear position on how humans know *at theory inception*. Experiential Learning Theory is as yet unable to make its position clear without contradicting its seminal sources.

How have others defined learning? There are two principal schools of thought. Those who define learning as an *outcome*. Those who define it as an *activity or change*. Those who define learning as an outcome refer to specific objects or states of being which result *from* learning. Kurt Lewin (on whose action research method and

experiential learning theory Kolb and Fry base theirs) distinguished learning as a “field” within which must be included four types of changes *internal* to the person.

- 1) Learning as a change in cognitive structure...
- 2) Learning as a change in motivation...
- 3) Learning as a change in group belongingness or ideology...
- 4) Learning in the Meaning of voluntary control of the body musculature.

Lewin, 51:66

Lewin’s definition describes the outcome of learning as a change in specific attributes of the person, which comprise a psychological and anatomical field.

William James and later, John Dewey, define learning in relation to acquisition of knowledge. The primary outcome is *Meaning*. Meaning is a derivative of introspection. It is also a derivative of association. Meaning becomes a derivative of previous experience projected unto the visual field. It is a chain of ideas bonded on the basis of repetition. (James, 1890: Vol. I) Dewey defines learning as the application of thinking or meaning to action resulting in behavioral outcomes.

Behavioral psychologist John Watson follows suit. Learning is an outcome in behavior of action. It is a *coordinated response to stimuli*. Learning results in the formation of habit. (Watson, 24:17) Learning may be the conditioning process itself, but it can only be *inferred* from the habit formed. Learning, for Watson, is contingent upon external stimuli, resulting in objectified responses.

Gregory Bateson attempts to bridge the gap between learning as outcome and learning as activity. Bateson applied cybernetic theory to the problem, classifying learning as a phenomenon of communication and control. The phenomenon involves cognitive processes with cybernetic regulative and self-correcting capabilities. Bateson depicts learning as a change in the process governing responses. (Bateson, 72:279)

Change in processes which govern responses, however, can again only be *inferred* from response outcomes. The response outcomes which Bateson observed, through which he drew his inferences, were primarily logico-deductive responses. On the basis of changes in *levels of logic*, Bateson inferred that learning involves changes in the formative activities of logic. He took as his reference point Russell's Theory of Logical Types, and constructed a theory of learning levels.

Zero learning is characterized by specificity of response which is not subject to correction (this is habituation).

Learning 1 is a change in specificity of response by correction of errors of choice within a set of alternatives.

Learning 2 is a change in the process of learning 1, e.g., a corrective change in the system of sets of alternatives from which choice is made, or it is a change in how the sequence of experience is punctuated.

Learning 3 is a change in the process of learning 2, e.g., a corrective change in the system of sets of alternatives from which choice is made.

Learning 4 would be change in Learning 3, but probably does not occur in any adult living organism on this earth.

Bateson, 72:293

Bateson portrays learning as an activity which establishes logical patterns, and through corrective mechanisms (not unlike those of cybernetic systems) changes those patterns on the basis of both contextual and non-contextual influences. His inferences concerning internal cognitive mechanisms are drawn from observation of responses.

Wolfgang Kohler and the early Gestalt psychologists also define learning as an activity. Kohler proclaimed learning as one of the three major domains of psychology, as one of "those processes the traces of which make recognition and reproduction possible." (Kohler, 29:301) Gestalt psychologists conceive of order in the universe as the result of a continuous dynamical interaction that leads to a dynamic distribution of

sensory experience. This dynamic distribution of sensory experience depends upon the relationship which emerges among the forces in a field. They define that relationship as a “gestalt”, a perceptual whole, a configuration of directed forces in a field. The organized field emerges from recognition of segregated objects within the field and their subsequent integration into the whole configuration. The whole configuration is sensory experience organized into a perception. The configuration is the visual field at a state of rest – equilibrated distribution of sensory experience. (Kohler, 29:149) It is this organized functional whole which leaves its trace on the central nervous system, from which other more complex organized configurations arise. (Kohler, 29:138-301) The influence of the Gestalt school on both Piaget and Lewin is obvious. The Gestalt tradition, however, begins with Kant and Idealism as its seminal roots. The origin of organizing activities lies outside the realm of causality – beyond our capacity to discern.

Piaget’s description of learning as a set of activities clearly depicts learning as *supplemental* to the primary activities of sensori-motoric and cognitive structure development. Learning is an activity which slowly emerges with the acquisition and development of these antecedent structures. Learning progresses in complexity as these sensori-motoric and cognitive structures continue to mediate the world of experience for the person. The primary interaction involves an *equilibration* of structuring activities, so as to provide a balanced system. (Piaget, 75:4)

[Learning can be viewed as]...a function of experience or exercise of two kinds: (a) as a function of physical experience, with abstraction from objects; for example, the acquisition of the concept of weight; (b) as a function of logico-mathematical experience, with abstraction starting from actions; for example, the discovery that the sum is independent of order (commutativity of addition). This kind (b) is often continued in (4)...(4) Acquisition by progressive equilibrium.

Beth and Piaget, 66:196.

Fundamental learning activities are not the primary formative activities taking place. In Piaget's system, learning builds from more elementary innate structures through interaction with experience. The development of these structures is primarily the result of internal organization and structuring operations that are not, themselves, governed or created by experience.

The general sensory-motor coordinations on which, by hypothesis, these constructions which derive elements from them by reflective abstraction are based, give rise to similar considerations, particularly as far as their internal equilibrium is concerned. But it is clear that the more elementary they are, the more they depend on innate factors. The problem of their development is thus pushed back from the psychological plane into the biological domain. But here again, however probable it may be that the environment plays a part in every process of organic development (in spite of contemporary biology), it nonetheless remains true that the factors of internal organization retain an overwhelming importance, which continues to guarantee a sufficient autonomy to the fundamental constructions from when proceed the general coordination of action.

Beth and Piaget, 66:298

Finally, it is significant to note that for Piaget, the aspects of learning which involve equilibration through assimilation and accommodation of structures and objects in experience, is *not* a matter of adaptive choice. It is again a matter of internal coordinated organizing activities.

Experiments concerned with the learning of logical structures (for example, the quantification of inclusion...or the conservation of a numerical collection) show that neither language nor empirical observations alone are enough to *set up* in the child's mind a structure which he does not yet possess. The only successful method is to start from a weaker structure which already exists and to lead to its generalization by eliciting reflective abstraction. In a general way, it is clear that processes of learning in the family, school, etc., lead to certain results, but *only insofar* as the child is capable of assimilating what is transmitted to him' and he only arrives at this assimilation by Means of assimilative procedures, which are the preliminary structures not yet learnt or not entirely learnt. If the latter have been learnt in part, it is because they themselves have only been understood owing to preliminary structures not yet learnt or not entirely learnt, and so on. Social and linguistic transmission is not, therefore, inscribed on a "tabula rasa" any more than empirical data are simply recorded (in spite of empiricism).

For Piaget, learning is dependent upon and subsequently contiguous with the development of innate structures. In this sense, learning is not a primary formative process. It emerges *after* the formation of fundamental structuring activities. Then, and only then, does learning act to enhance and enlarge those structures through mediating experience. Piaget is clear that the primary development of those structures depends upon the genetic interiorised organization which arises out of coordinated action.

Finally, it is worth noting the contribution to learning theory made by bio-energetic psychotherapy . Stanley Keleman defines learning as a “transfer of experience – a culmination of the resonating of the body’s excitation” which lights up the powers of cognition and is part of the ongoing expansion-contraction process of human sensory excitation. (Keleman, 75:119) Learning is linked here to the transfer of bio-electrical impulses which stimulate cognitive and biological activities. In essence, bio-energeticists define learning as an activity of primal consciousness.

What do these definitions have in common? First it is apparent that when learning is defined as an outcome, it involves an activity, and when learning is defined as an activity, it involves an outcome. Second, it appears that whether learning results in the formation of Meaning or an intention for action, it involves certain activities and responses *interior to the person* that make continued contact with external substance *coherent*. This coherence is the result of certain structuring and organizing activities which are formative in respect to the capacity to learn, and are directed and equilibrated. Once these structures and organizing activities are present in a whole,

learning functions to *mediate* ongoing experience, which stimulates the redistribution and reorganizing of structures. This mediation comes from learning's ability to use the organizing and structuring activities already present within the person to further *transform* unstructured experience and create closure. Closure around experience is represented in units of knowing. Units of knowing are referred to as knowledge.

Finally, learning appears to be self-generating and continuous. As it mediate experience, learning provides the impetus for further restructuring and organizing activities to take place. It is because of this generational capability that we can think of learning as a developmental activity which increases cognitive and behavioral complexity within the person.

If learning is a mediating phenomenon, then, by definition, it cannot be seen. For that which mediates is transitive. That which is transitive is in the realm of non-materiality. Transitivity is defined as a "passing from one condition, form, stage, activity, place, etc. to another." (Oxford English Dictionary). To see that which is transitive can only be accomplished by giving it materiality. Once given materiality, it is no longer that which it is. Its constitutive nature, dynamic and moving, has been made static.

In many ways, learning is like the wind. One cannot actually see the wind. When we capture the wind, what we have is trapped air. Trapped air is no longer that which is the wind. It is its derivative. To capture and materialize learning is to see learning's derivatives. Therefore, what we can know of learning empirically is through inference upon its derivatives. To speak of learning as outcomes is to speak of it as if it were its derivatives. In fact, learning is antecedent to its derivatives. Hence we can assume that learning is an activity which generates and mediates experience. *It must then be an*

activity which mediates experience through the capacities of consciousness. Learning mediates experience toward an end. That end is an aspect of knowing.

Knowing is an end of learning. Yet not all knowing is the result of learning. One does not learn what one knows in intuition. Intuition is considered by Aristotle to be the “originative source of scientific knowledge.” Scientific knowledge attains to the final cause of all things and is based on universal, primary premises. But universal primary premises cannot be known through scientific knowledge. “Intuition grasps the original basic premises, while science as a whole is similarly related as the originative source to the whole body of fact.” (Aristotle, *Posterior Analytics*, Book II:19)

Polyani contends that intuition arises from a tacit dimension, while Piaget proposes it emerges from the construction of certain forms of structures. Regardless of source, intuition merges the tacit dimension with the cerebral dimension. It merges the primal with the analytic-synthetic. That which we know in intuition represents *more* than we can express through knowledge. It has a primal source and a cerebral context. Knowledge is the structuring of knowing as cognition. Cognition has limitations similar to those given in materiality. It is intuitive knowing, however, upon which Jung based his theory of collective unconscious and Plato his “Realm of Ideas.” These aspects of knowing do not conform to a techno-rational scientific explanation. At the most, this kind of knowing can be represented as an electrical impulse on a monitoring device. That which we know as intuition is *not mediated*. It is *immediate*. As such, intuition does not require the mechanisms which learning provides.

When we speak of learning, we must limit ourselves to the activities which bring about scientific knowledge, opinion, certain aspects of the arts, and voluntary motoric

activity. Learning can also result in knowledge of self, psychological knowledge. We cannot say that one utilizes learning to acquire all forms of knowing. We cannot say that one learns *wisdom*. Wisdom is attained as the universal principles of causality and the essential nature of things as they really are become realized through intuition and from thence, the understanding. As Socrates pointed out, there can be training of the mind and the spirit in readiness for wisdom. And much of that training involves the activity of learning. Yet there are realms of knowing and understanding which learning does not facilitate

Hence, we arrive a definition of learning as an activity which mediates experience through capacities of consciousness, resulting in coherent forms of knowing precipitant to scientific knowledge. It involves sensory perception, cognition, motoric activity, and expression. Learning qua learning has no normative requisites. When the mediation of experience through the capacities of consciousness facilitate social adjustment, then learning can be said to aid social adaptation. When it mediates experience to facilitate psycho-social growth, then learning can be said to aid psychological and personal development. Learning mediates experience toward specific ends. It may or may not enhance the survival of the organism. As a thing-in-and-of-itself, as a noumenon, learning plays a role in adaptive outcomes. But its role in living far exceeds the purposes circumscribed by social adaptation.

Experiential Learning Theory defines learning as “as a process of conflict confrontation and resolution among four basic adaptive modes or ways of relating to the world.” (Kolb and Fry, 75:37) Learning is defined as a process of social adaptation

resulting in behavioral change. Kolb and Fry detour by adapting Lewin's theory of experiential learning in groups to learning qua learning. By taking cognitive and socio-emotional adaptation as the springboard for a definition, Kolb and Fry sabotage learning, and contradict the very science they hope to promote. *In order to define learning, one must begin with how humans know, not how humans adapt in groups.* How humans adapt in groups is a longitudinal socialization derivative of how the human mind comes to learn.

Kolb and Fry's interest in learning qua learning was an admitted afterthought.

Perhaps because of the practical face validity of the experiential learning model there has been relatively little serious scientific research directed towards understanding the dynamics of the learning process from this perspective. While the model has become a pivotal tool in training design and consulting practice, there has been little attention given to the exploration of how learning takes place and why experiential learning techniques and action-research methods work. For the past several years we have been engaged in a research programme aimed at answering these questions.

Kolb and Fry, 75:34

Whereas experiential learning techniques and action-research methods may facilitate change and even learning in adults in groups, they do not represent an epistemological explanation for how humans know or come to learn. The contradictions and unresolved foundational assumptions inherent in Experiential Learning Theory rapidly accumulate when one turns to an examination of the constructs promulgated to develop the Experiential Learning Model.

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